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Pacific Ocean garbage patch worries researchers

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A tawny stuffed puppy bobs in cold sea water, his four stiff legs tangled in the green net of some nameless fisherman.

It's one of the bigger pieces of trash in a sprawling mass of garbage-littered water, known as the Great Pacific Garbage Patch, where most of the plastic looks like snowy confetti against the deep blue of the north Pacific Ocean.

Most of the trash has broken into bite-sized plastic bits, and scientists want to know whether it's sickening or killing the small fish, plankton and birds that ingest it.

During their August fact-finding expedition, a group of University of California scientists found much more debris than they expected. The team announced their observations at a San Diego press conference Thursday.

"It's pretty shocking — it's unusual to find exactly what you're looking for," said Miriam Goldstein, who led fellow researchers from the Scripps Institution of Oceanography at UC San Diego on the three-week voyage.

While scientists have documented trash's harmful effects for coastal marine life, there's little research on garbage patches, which were first explored extensively by self-trained ocean researcher Charles Moore just a decade ago. There's also scant research on the marine life at the bottom of the food chain that inhabit the patch.

But even the weather-beaten, sunbleached plastic flakes that are smaller than a thumbnail can be alarming.

"They're the right size to be interacting with the food chain out there," Goldstein said.

The team also netted occasional water bottles with barnacles clinging to the side. Some of the trash had labels written in Chinese and English, hints of the long journeys garbage takes to arrive mid-ocean.

Plastic sea trash doesn't biodegrade and often floats at the surface. Bottlecaps, bags and wrappers that end up in the ocean from the wind or through overflowing sewage systems can then drift thousands of miles.

The sheer quantity of plastic that accumulates in the North Pacific Gyre, a vortex formed by ocean and wind currents and located 1,000 miles off the California coast, has the scientists worried about how it might harm the sea creatures there.

A study released earlier this month estimated that thousands of tons of plastic debris wind up in the oceans every year, and some of that has ended up in the swirling currents of the Great Pacific Garbage Patch.

Katsuhiko Saido, a chemist at Nihon University, Chiba, Japan, told the annual meeting of the American Chemical Society last week that plastic actually does decompose, releasing potentially toxic chemicals that can disrupt the functioning of hormones in animals and marine life.

The Scripps team hopes the samples they gathered during the trip nail down answers to questions of the trash's environmental impact. Does eating plastic poison plankton? Is the ecosystem in trouble when new sea creatures hitchhike on the side of a water bottle?

Plastics have entangled birds and turned up in the bellies of fish, and one paper cited by the National Oceanic and Atmospheric Administration estimates 100,000 marine mammals die trash-related deaths each year.

The scientists hope their data gives clues as to the density and extent of marine debris, especially since the Great Pacific Garbage Patch may have company in the Southern Hemisphere, where scientists say the gyre is four times bigger.

"We're afraid at what we're going to find in the South Gyre, but we've got to go there," said Tony Haymet, director of the Scripps Institution.

Only humans are to blame for ocean debris, Goldstein said. In a blog entry posted a day before the science ship arrived in Newport, Ore., she wrote the research showed her the consequences of humanity's footprint on nature.

"Seeing that influence just floating out here in the middle of nowhere makes our power painfully obvious, and the consequences of the industrial age plain," she wrote. "It's not a pretty sight."

On the Net:

_ Scripps Institution of Oceanography, www.sio.ucsd.edu/

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